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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,671	11/11/2003	John M. Morgenstern	SAI.P015 US	8312

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EXAMINER

DINH, TIEN QUANG

ART UNIT	PAPER NUMBER
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3644

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/706,671

Applicant(s)

MORGENSTERN, JOHN M.

Examiner

Tien Dinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 32-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 32, "the supersonic aircraft" lacks antecedent basis.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-6, 8-10, 23, 24, 26, 28, 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friebel et al in view of Schwaerzler et al.

Friebel et al discloses a wing on a supersonic aircraft having an inboard section that is oriented dihedrally, central section, a nacelle, and an outboard winglet that is oriented anhedrally relative to a lateral axis to increase ground effect during takeoff and provide positive wave drag interference with the nacelle. Friebel et al is silent on the leading edge flaps formed from the

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leading edge segments of the inboard, central and outboard section and the control system to control the leading edge flaps including the strake. However, Schwaerzler et al teaches that a control system that control the leading edge flaps (including strakes) are well known in the art.

It would have been obvious to one skilled in the art at the time the invention was made to have used a control system with leading edge flaps in Friebe et al's system as taught by Schwaerzler et al to increase control, maneuverability of the aircraft, reduce trim and vortex drag, and reduce sonic boom.

Re claim 6, the leading edge flaps on the winglet would provide roll control and directional control with proverse roll effects.

Re claims 9 and 10, these are steps that one skilled in the art would recognized as the result of the leading edge flaps being used.

Re claim 28, due to the dihedral angle of the inboard section and the central section of the wing in Friebe et al's system, this would allow fuel stored within the inboard section and central section to be readily pumped. Fuels being stored in wing sections are notoriously well known in this day and age.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friebe et al as modified by Schwaerzler et al as applied to claim I above, and further in view of McKinney et al.

Friebe et al as modified by Schwaerzler et al discloses all claimed parts except for the Kreuger flap. However, McKinney et al teaches that Kreuger flaps are well known in the art.

It would have been obvious to one skilled in the art at the time the invention was made to have used Kreuger flaps in the wing of Friebe et al as modified by Schwaerzler et al and as taught by McKinney et al to increase control and maneuverability.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friebe et al as modified by Schwaerzler et al as applied to claim 1 above, and further in view of Gillingham et al.

Friebe et al as modified by Schwaerzler et al discloses all claimed parts except for the control of the leading edge flaps in conjunction with the trailing edge flaps to reduce drag at subsonic speed. However, Gillingham et al teaches that controlling the leading edge flaps in conjunction with the trailing edge flaps are well known in the art.

It would have been obvious to one skilled in the art at the time the invention was made to have controlled the leading edge flaps in conjunction with trailing edge flaps in Friebe et al's system as modified by Schwaerzler et al and as taught by Gillingham et al to increase maneuverability and reduce drag at subsonic speed.

Claims 11-15, 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friebe et al in view of Schwaerzler et al and McKinney et al.

Friebe et al discloses a wing on a supersonic aircraft having an inboard section that is oriented dihedrally, central section, a nacelle, and an outboard winglet that is oriented anhedrally relative to a lateral axis to increase ground effect during takeoff and provide positive wave drag interference with the nacelle. Friebe et al is silent on the leading edge flaps formed from the

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leading edge segments of the inboard, central and outboard section, the control system to control the leading edge flaps including the strake, and the Kreuger flaps. However, Schwaerzler et al teaches that a control system that control the leading edge flaps (including strakes) are well known in the art. Also, McKinney et al teaches that Kreuger flaps are well known in the art.

It would have been obvious to one skilled in the art at the time the invention was made to have used a control system with leading edge flaps in Friebe et al's system as taught by Schwaerzler et al to increase control, maneuverability of the aircraft, reduce trim and vortex drag, and reduce sonic boom. Furthermore, it would have been obvious to one skilled in the art at the time the invention was made to have used Kreuger flaps in the wing of Friebe et al as modified by Schwaerzler et al and as taught by McKinney et al to increase control and maneuverability.

Re claims 12, 13, 20, and 21, please note that Schwaerzler et al teaches that the strake are swept at a different angle than that of the inboard portion and the winglet.

Re claim 6, the leading edge flaps on the winglet would provide roll control and directional control with proverse roll effects.

Re claims 18 and 22, these are steps that one skilled in the art would recognize as the result of the leading edge flaps being used.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friebe et al as modified by Schwaerzler et al and McKinney et al as applied to claim 1 above, and further in view of Gillingham et al.

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Friebel et al as modified by Schwaerzler et al and McKinney et al discloses all claimed parts except for controlling the leading edge flaps in conjunction with the trailing edge flaps. However, Gillingham et al teaches that controlling the leading edge flaps in conjunction with the trailing edge flaps are well known in the art.

It would have been obvious to one skilled in the art at the time the invention was made to have controlled the leading edge flaps in conjunction with trailing edge flaps in Friebel et al's system as modified by Schwaerzler et al and McKinney et al and as taught by Gillingham et al to increase maneuverability and reduce drag at subsonic speed.

Claims 27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friebel et al as modified by Schwaerzler et al as applied to claim 23 above, and further in view of Klug.

Friebel et al as modified by Schwaerzler et al discloses all claimed parts except for actuator to rotate the winglets with respect to an axis. However, Klug teaches that controlling the winglets with actuators with respect to an axis is well known in the art.

It would have been obvious to one skilled in the art at the time the invention was made to have used an actuator to rotate the winglets in Friebel et al's system as modified by Schwaerzler et al and as taught by Klug to increase maneuverability and to control the air around the wing.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friebel et al as modified by Schwaerzler et al as applied to claim 23 above, and further in view of Rutan or Welles.

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Friebel et al as modified by Schwaerzler et al discloses all claimed parts except for the sweep angle of the outboard winglet is less than the sweep angle of the central section of the wing. However, Rutan or Welles teaches that Kreuger the sweep angle of the outboard winglet is less than the sweep angle of the central section of the wing is well known in the art. See figures 1 and 8 of Welles. The Examiner interprets the part where the number 22 is pointed in figure 1 of Rutan is the winglet while the central section is where number 14 is pointed to in figure 1 of Rutan.

It would have been obvious to one skilled in the art at the time the invention was made to have made the sweep angle of the outboard winglet less than the sweep angle of the central section of the wing in Friebel et al's system as modified by Schwaerzler et al and as taught by Rutan or Welles to increase maneuverability and improve the aerodynamics of the aircraft.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friebel '204 in view of Vess et al and Schwaerzler et al.

Friebel '204 teaches an aircraft having a wing with inboard section next to the fuselage, a central section (where number 7 is pointed to) with a second swept angle, and an outboard winglet 2 that has an anhedral angle with a third swept wing angle. However, Friebel is silent on the leading edge flaps mounted on the central and outboard winglet and the inboard wing section is swept at a first angle. However, Vess et al discloses an aircraft having an inboard wing section that has a first swept angle that is different from the middle and outer wing sections. Schwaerzler et al teaches that leading edge flaps mounted to the middle and outboard winglet is well known in the art (see figure 2).

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It would have been obvious to one skilled in the art at the time the invention was made to have made the inboard section of the wing at a first swept angle that is different from the middle and outboard section's swept angle and to have used leading edge flaps on the wings in Friebel's system as taught by Vess et al and Schwaerzler et al to increase maneuverability, increase efficiency, and to make the aircraft safer to fly.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friebel '204 as modified by Vess et al and Schwaerzler et al as applied to claim 32 above, and further in view of Wenk.

Friebel '204 as modified by Vess et al and Schwaerzler et al discloses all claimed parts except for the inboard section being dihedral. However, Wenk discloses that an inboard wing section being dihedral is well known in the art (SEE FIGURES 2 AND 4).

It would have been obvious to make the inboard section of Friebel's section dihedral as modified by Vess et al and Schwaerzler et al and as taught by Wenk to make the aircraft more efficient.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friebel '204 as modified by Vess et al and Schwaerzler et al as applied to claim 32 above, and further in view of McKinney et al.

Friebel '204 as modified by Vess et al and Schwaerzler et al discloses all claimed parts except for the Krueger flap. McKinney et al teaches that Kreuger flaps are well known in the art.

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It would have been obvious to use Krueger flaps in Friebel's wing as modified by Vess et al and Schwaerzler et al and as taught by McKinney et al to make the aircraft more efficient.

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friebel '204 as modified by Vess et al and Schwaerzler et al as applied to claim 32 above, and further in view of Gillingham et al.

Friebel '204 as modified by Vess et al and Schwaerzler et al discloses all claimed parts except for the controlling the leading edge flaps in conjunction with the trailing edge flaps. However, Gillingham et al teaches that controlling the leading edge flaps in conjunction with the trailing edge flaps are well known in the art.

It would have been obvious to one skilled in the art at the time the invention was made to have controlled the leading edge flaps in conjunction with trailing edge flaps in Friebel's system as modified by Schwaerzler et al and McKinney et al and as taught by Gillingham et al to increase maneuverability and reduce drag at subsonic speed.

Response to Arguments

In response to applicant's arguments that the Schwaerzler et al reference does not disclose leading edge flaps including strakes. Please note that Schwaerzler et al teaches that strakes 1' and 1'' are well known. Please also note that in figure 2, the flaps are located at the front of the wing. Although there are no numbers being assigned to flaps at the middle edge and outer edge, figure 2 clearly shows that leading edge flaps can be seen in figure 2. There are

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trailing edge flaps at the end of the wings also. One skilled in the art would recognize that control systems in aircrafts are notoriously well known and is in Schwaerzler et al's system.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, leading edge flaps on the front edge of the wings make aircrafts more maneuverable. One skilled in the art would have made the leading edge flaps accommodate any type of wings either curved or straight so that the aircraft can be more maneuverable.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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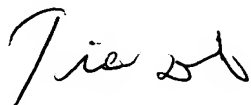
however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tien Dinh whose telephone number is 703-308-2798. The examiner can normally be reached on 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 703-306-4198. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TD

A handwritten signature in cursive script, appearing to read "Tien Dinh", is written in black ink.